

IN THE CLAIMS

1. (Currently Amended) A magnetic tunnel effect type magnetic head comprising:

a first soft magnetic conductive layer which is to provide a lower shielding layer;

a metal oxide layer and a first nonmagnetic conductive layer, formed on the first soft magnetic conductive layer, to provide a lower gap layer;

a magnetic tunnel junction layer formed on the first nonmagnetic conductive layer to provide a magnetic tunnel junction element;

a second nonmagnetic conductive layer formed on the magnetic tunnel junction layer to provide an upper gap layer; and

a second soft magnetic conductive layer formed on the second nonmagnetic conductive layer to provide an upper shielding layer,

wherein,

the metal oxide layer of the lower gap layer is disposed beneath at least the magnetic tunnel junction layer, ~~and~~

~~— a surface of the metal oxide layer is a mechanically and chemically polished to a smooth layer.~~

2. (Original) The magnetic tunnel effect type magnetic head according to claim 1, wherein the metal oxide layer is of an aluminum oxide.

3. (Original) The magnetic tunnel effect type magnetic head according to claim 1, wherein the metal oxide layer has a thickness of over 10 nm and under a half of a gap length.

4. (Canceled)

5. (Previously Presented) The magnetic tunnel effect type magnetic head according to claim 1, being of a yoke type in which the magnetic tunnel junction element is not exposed from a medium-opposite face.

6. (Currently Amended) A method of producing a magnetic tunnel effect type magnetic head, the method comprising steps of:

forming a first soft magnetic conductive layer on a substrate to provide a lower shielding layer;

forming, on the first soft magnetic conductive layer, a metal oxide layer and a first nonmagnetic conductive layer to provide a lower gap layer;

~~chemically and mechanically polishing the metal oxide layer to provide a smooth surface;~~

forming, on the first nonmagnetic conductive layer, a magnetic tunnel junction layer to provide a magnetic tunnel junction element;

forming, on the magnetic tunnel junction layer, a second nonmagnetic conductive layer to provide an upper gap layer; and

forming, on the second nonmagnetic conductive layer, a second soft magnetic conductive layer to provide an upper shielding layer;

the metal oxide layer in the lower gap layer being formed beneath at least the magnetic tunnel junction layer.

7. (Original) The method according to claim 6, wherein the metal oxide layer is of an aluminum oxide.

8. (Original) The method according to claim 6, wherein the metal oxide layer has a thickness of over 10 nm and under a half of a gap length.

9. (Canceled)

10. (Previously Presented) The method according to claim 6, wherein the magnetic tunnel effect type head is of a yoke type in which the magnetic tunnel junction element is not exposed from a medium-opposite face.

○ —11. (New) The magnetic tunnel effect type magnetic head according to claim 1, wherein the metal oxide layer has a surface roughness of less than 0.2 nm in the center line average height Ra.

12. (New) The method according to claim 6, further comprising chemically and mechanically polishing the metal oxide layer.

○ —13. (New) The method according to claim 6, wherein the metal oxide layer has a surface roughness of less than 0.2 nm in center line average height Ra.